

# Botanical Gazette.

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**Note on *Salix Sitchensis* and its affinities.**—Among some specimens of willows sent from Washington Territory, by Mr. W. N. Suxsdorf, my attention was particularly directed to one showing but a single stamen under each seale. There were fertile aments to match, and good leaves accompanying both sexes, so that I had no hesitancy in referring all to *Salix Sitchensis*, the fruit of which is quite unique among American willows. Need I say that no time was lost in a critical re-examination of all the staminate *Sitchensis* in my herbarium, from British Columbia to California, nor how astonished I was to find this peculiarity of a single stamen, constant throughout! At first glance the profusion of stamens in Mr. Howell's specimens appeared to belie any such reduction, but it needed only the most cursory examination with a magnifier to show what an oversight I had been guilty of, at the very outset, in framing my key to the *Diandra* of the Californian Flora. This brings me directly to remark that we have now a clew to the true character and affinity of that obscure species, *S. Coulteri*. It is, in my opinion, simply an extravagant, autumnal growth of *Sitchensis*, bearing the same relation to the normal development of the species that the serotinous state of the *S. lasiolepis* (upon which *S. Hartwegi* was founded) does to typical *lasiolepis*. Considering the excessive variability of the leaves of willows there is nothing in the form, vesture, petioles or stipules to invalidate this view, while on the other hand we have the significant fact that *Sitchensis* and *Coulteri* share together the single stamen—a character unique among Pacific coast willows.

*Salix Coulteri* is known only from two gatherings, the original one by Coulter, and the other by Bolander, both staminate, with scarcely developed aments appearing in the axils of leaves so old, so thoroughly mature and rigid, that where doubled in pressing they have *broken* instead of bending. Above there is a younger growth, such as might appear along with the normal expansion of the aments. Bolander says the tree is "common in Marion county," but if this is true why has the pistillate plant never been collected? If however we find that *Coulteri* is only an abnormal, secondary growth of what under ordinary conditions would be recognized as *Sitchensis*, the answer is obvious. Old leaves of *Sitchensis*, known to be such, I have never seen. I doubt if they exist in any herba-

rim on either side of the Atlantic. At best we have had young, succulent growths—usually taken with the mature fruit. Mr. Suksdorf's specimens give us the full grown—if not the old and rigid leaves, and they show a decided approach to so called *Coulteri*! It remains to consider the thicker and more densely villous aments, and the stout, furrowed, tomentose twigs of *Coulteri*; but here again Mr. Suksdorf's specimens are intermediate in character, and we need only concede a degree of variation paralleled by our familiar *S. humilis* to warrant the uniting of the two extremes.

I broach, with much hesitancy, a further consideration of the place of *S. Sitchensis* in a methodical arrangement of species. Professor Andersson grouped it with *sericea* and *petiolaris* as a peculiarly American type, at the same time arranging *Coulteri* with *lasiolepis* as manifestly representing the European *S. daphnoides*, suggesting however a doubtful affinity to *S. discolor* (*eriocephala*) and *S. lanata* through the intermediation of *Hookeriana* and *speciosa*. Remembering the scanty material before the distinguished Salicologist these conjectures appear sufficiently plausible; but *Coulteri*, must be most nearly allied to—if not identical with—*Sitchensis* and it is clear that *Sitchensis* is distinguished from the species with which it has been heretofore associated not only by the single stamen but also by the long, narrowly cylindrical fertile aments erect then spreading, sessile capsules with manifest style—short petioled leaves with entire revolute margins, etc.

May it not be that *Sitchensis* represents in America the European *Syandra*; a group so commonly distributed throughout Europe and Asia that its entire omission from our flora has always appeared remarkable, and furthermore one which if found at all with us would most likely appear on the Pacific slope where already *S. Breweri* gives us our only species of the *Viminalis*. Is the coalescence of the two stamens in *purpurea* carried a step further to the extreme of suppressing entirely one of the members in *Sitchensis*?

A peculiar American type it may still be, "*pulcherrima et distinctissima species*" it most certainly is, but its place seems to be with or near the *Syandra* rather than among any of the recognized groups of the *Diandra*.—M. S. BEBB.

**Protandry of *Pastinaca*.**—Will you kindly allow me to correct a mistake into which your correspondent, A. F. Foerste, falls, in his note on "*Pastinaca sativa* Proterandrous" (BOT. GAZETTE, Feb. 1882, p. 24.). So far as I know all *Umbelliferae* that have been studied in this respect are described as protandrous, and in nearly every case the dichogamy is quite as marked as in *Pastinaca*. Although not understood, the fact was observed by Ponedera 160 years ago; and it was well described and explained by Sprengel near the end of the last century. There are probably a few genera having inconspicuous flowers, with imperfect protandry, and it is not impossible that synæmic species may be found. So